5.5 York County Profile

The following sections present a detailed assessment of critical hazards that affect York County. Understanding these hazards will assist the Peninsula region in its process of identifying specific risks and developing a mitigation strategy to address those risks.

5.5.1 Flooding – York County

The geographic location of York County makes it extremely susceptible to coastal flooding. Storms associated with coastal flooding include tropical cyclones and nor'easters. These types of events typically drop large amounts of rain and generate high winds that result in storm surge. Storm surge is essentially the water that is pushed toward the shore by the persistent force of the winds of an approaching storm. It should be noted that astronomical tides occur independent of climatic conditions. Depending on the tide level at the time of land-falling storms, surge may be elevated. Flash flooding and urban flooding are also a concern within the County limits.

As part of the NFIP, FEMA created a Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) for York County. In addition, the NCDC tracks the occurrence of flooding events for communities across the nation. York County has developed surge elevations for its parcel data set. All of these data sources were utilized in developing the hazard identification and vulnerability assessment.

FEMA published a FIS for York County, dated December 16, 1988. The FIRMs, which accompany this FIS delineate the 100- and 500-year flood hazard boundaries for flooding sources identified in areas of growing development or areas predicted to have future development, at the time of the report. A detailed wave height analysis was developed in order to delineate the 100- and 500-year flood hazard boundaries for the County. This analysis resulted in a 100-year stillwater elevation of 8.5 feet for the County and a maximum 100-year wave crest of 11 to 13 feet. The significant flood events outlined in the FIS are given below in Table 5.5.1a.

Table 5.5.1a- Significant Flood Events – York County

Date	Storm	Tide Elevations
August 1933	Hurricane	Max tide heights averaged 8 feet
April 1956	Nor'easter	Not given
October 1957	Hurricane – Not Named	Not given
September 1960	Hurricane Donna	Not given
March 1962	Nor'easter	Max tide heights averaged 6.8 feet

Source: FEMA 1988

The NCDC operated by NOAA keeps a record of significant weather related events and damage estimates for the entire country. Listed below (Table 5.5.1b) are the significant events that have affected York County, according to that database.

Table 5.5.1b- NCDC Listed Significant Flood Events –York County

Date	Event	Precipitation	Comments
1989 (not in NCDC database)	Thunderstorm with urban flooding	Not given	▪ Urban flooding costs estimated at $500,000 in York County.
September 22, 1994	Coastal Flooding	Not given	▪ Caused minor local flooding along Water Street in Yorktown
April 23, 1997	Coastal Flooding	Not given	▪ Minor coastal flooding was reported in portions of Newport News and York County
January 27, 1998	Coastal Flooding	Not given	▪ Residential homes sustained severe damages ▪ Gale force winds caused damage to power lines which caused power outages locally
February 4, 1998	Coastal Flooding Nor'easter	Not given	▪ Caused severe flooding ▪ Buildings were evacuated ▪ Widely spread power outage ▪ $314,000 in costs incurred by York County government
September 15 to 17, 1999	Hurricane Floyd	12 to 18 inches	▪ Numerous roads washed out due to flooding ▪ Flooding considered 500-year flood ▪ Enormous crop damage

As with the entire Peninsula planning area, there are obvious data gaps when combining the FIS and NCDC databases. Recent, noteworthy urban-type flood events in the County have included:

- Hurricane Floyd (1999) affected the neighborhoods of Tabb Lakes, Coventry, Running Man and Foxwood. Insufficiently sized culverts, culvert blockages, and intense rainfall contributed to the drainage problems.
- July 24, 2000, intense rainfall affected the Tabb Lakes and Coventry subdivisions.
- Hurricane Isabel (2001) resulted in flooding of some streets and intersections in many of the same subdivisions listed above, but no significant flooding of structures was noted.

The County has been working with residents recently to identify and abate these drainage problems. As a result of Hurricane Floyd, Newport News Waterworks made changes to their reservoir management practices to be more proactive in adjusting reservoir elevations ahead of storm systems that are predicted to produce excessive rainfall amounts. Residents indicate that Little Brick Kiln Creek, which is on the Newport News/York County boundary, is a major outfall for several York County tributaries with very low slopes. Maintenance of the creek by all stakeholders (including the U.S. Army which also has land holdings in the area) is critical to maintaining sufficient drainage using existing infrastructure.

5.5.2 Hurricanes – York County

The FIS for York County identified four historic hurricanes that affected the County (see Table 5.5.1a above); however, specific damage estimates were not given. The NCDC dataset listed five hurricanes for York County for the period between 1950 to June 2004. These storms are listed in Table 5.4.2. County records and other National Weather Service data provide dates of earlier storms and identify a number of hurricanes to include the damaging event in August 1933. These storms are included in Table 5.5.2.

Typical York County damage from Isabel where trees fell into power lines

Hurricane Fran (1996) created power losses to 140,000 people across the Peninsula. Additionally, four people died within York County as a result of Fran.

Hurricane Floyd (1999) moved through the area dropping 18 inches of rain within 24 hours. Trees and power lines were knocked down and roads were flooded; over 5,500 homes were left without power.

Hurricane Isabel made landfall on September 18, 2003, as a Category 2 hurricane near Drum Inlet, North Carolina. Hurricane Isabel is considered to be one of the most significant tropical cyclones to hit this area since hurricane Hazel (1954) and the Chesapeake-Potomac Hurricane of 1933. Isabel produced storm surges six to eight feet above normal high tide levels and is directly responsible for 10 deaths in Virginia and indirectly responsible for 22 deaths. Isabel caused widespread wind and storm surge damage in eastern North Carolina and southeastern Virginia, currently estimated at $925 million in Virginia. All of the above data was taken from the NOAA Tropical Cyclone Report for Hurricane Isabel (Beven and Cobb, 2004).

In York County, Hurricane Isabel reportedly destroyed 55 homes. Debris removal alone cost the county over $10.6 million. There were 900 flood insurance claims through the NFIP, which represent only a small portion of the total number of homes that were damaged by floodwaters. The Small Business Administration provided loans for home repair totaling $9 million, and loans for businesses totaling $909,000. FEMA housing assistance other needs assistance in the County totaled $2.6 million

Table 5.5.2- Historic Hurricanes – York County

Date	Storm Name	Category	Descriptions
August 23,1933	Chesapeake-Potomac Hurricane	Category 1/Tropical Storm	▪ Extensive damage to areas along the York River and Chesapeake Bay. Tide levels of 6-9 feet above MLLW over a large portion of the Bay. Peak wind gusts at Cape Henry were 88 mph.
August 19, 1985	Danny	Extratropical System	▪ Tracked over York County
September 6, 1996	Fran	Tropical Storm	▪ 4 deaths in York County associated with the storm ▪ Water Street and other areas flooded ▪ High winds, and 140,000 on the Peninsula without power.
July 12, 1996	Bertha	Tropical Storm	▪ 170,000 people on the Peninsula without power. Tracked over York County.
August 29, 1998	Bonnie	Tropical Storm	▪ 51,000 people on Peninsula without power.
September 1, 1999	Dennis	Hurricane/Tropical Storm	▪ Prolonged period of tropical cyclone ▪ Highest sustained winds at Langley 52 mph ▪ Tide 3 feet above normal ▪ Coastal flooding ▪ 2 to 5 inches of rain ▪ $27,000 damage
September 15, 1999	Floyd	Category 1/Tropical Storm	▪ Spawned 2 tornados ▪ Hundreds of downed tress ▪ Tide 3.9 feet above normal ▪ Numerous roads washed out ▪ $99.4 million in property damage over the entire affected area ▪ 18” of rainfall in York County
September 18, 2003	Isabel	Category 1/Tropical Storm	▪ Hundreds of downed tress ▪ Loss of power ▪ Damaged residents and businesses ▪ Greatest storm surge since Hazel
August 18, 2004	Charley	Hurricane	▪ Uprooted of trees and downed numerous power lines ▪ Over 2 million Virginians without power ▪ Heavy rain and wind gusts
August 30, 2004	Gaston	Tropical Depression	▪ Hard rains that produced flooding ▪ Roads under water ▪ Power outage (99,600 statewide) ▪ 2 F0 Tornados confirmed in York County.
September 8, 2004	Frances	Hurricane	▪ Generated 9 tornados in Central Virginia ▪ High winds ▪ Large amounts of rainfall/flooding
September 17, 2004	Ivan	Hurricane	▪ Spawned unconfirmed tornados ▪ Power outage (66,000) ▪ Heavy rain/flooding
September 28, 2004	Jeanne	Hurricane	▪ Flash flooding/heavy rainfall ▪ Power outage

5.5.3 Tornados – York County

York County has experienced five tornados over the period of 1896 to 2003 (Table 5.5.3), which have caused a variety of damage. The most significant tornado occurred on October 14, 1986, which generated wind of 110 mph and cause $1.8 million in damages over the entire affected area.

Table 5.5.3- Historic Tornados – York County

Date	Magnitude	Deaths	Injuries	Descriptions
July 8, 1896	Not Given	Not Given	2-5	▪ Spawned by a hurricane ▪ Barns and small houses destroyed
May 8, 1984	Not Given	Not Given	Not Given	▪ Spawned by severe thunderstorms ▪ Destroyed three mobile homes
October 14, 1986	F2	Not Given	Not Given	▪ Down burst of 110mph ▪ Damages of $1.8 million over entire affected area
August 7, 1993	F0	0	0	▪ Damage to several structures in the Lackey area.
August 2003	F0	0	0	▪ Damage to structures in Running Man subdivision in the Tabb area, winds in the 80 MPH range.
August 30, 2004	F0 (2)	Not Given	Not Given	▪ Associated with Gaston

5.5.4 Erosion – York County

York County is unique among Peninsula communities because the shoreline erosion hazard has historically caused more damage, and has the potential for additional damage in the future. The hazard, however, is pertinent from a land use perspective only and poses little threat to human life, health or safety. Furthermore, the erosion hazard is a secondary hazard caused by storms and sea level rise. The uniqueness of York County's erosion hazard merits additional consideration in this section, and is also discussed and mapped in detail in the County's 2025 Comprehensive Plan which should be referenced for additional information and graphics. The information below is taken primarily from the Comprehensive Plan.

York County's shoreline consists of sheltered fine sand beaches, coarse sand beaches, exposed tidal flats, sheltered tidal flats, fringing intertidal marshes, supratidal marshes partially protected by elevation, and freshwater marshes and swamps. There are approximately 2,308 acres of marshes in the County.

York County encompasses approximately 207 miles of shoreline. The upper County drains via a system of streams and rivers, to the southern reach of the York River. This area is characterized by rolling terrain with well-drained soils and elevations up to 100 feet above mean sea level. In isolated areas, moderate to severe erosion has been noted. The lower County drains via a system of creeks and rivers to the Chesapeake Bay. The lower County section of shoreline includes

Wormley Creek, Back Creek, Chisman Creek, a portion of the Poquoson River, and the western shore of the Chesapeake Bay. Low flat lands with a relatively high water table characterize the topography of the lower County.

The impacts of natural and human activities on the shoreline can be measured by erosion rates, which are used to determine the most appropriate method to address erosion. The Chesapeake Bay Local Assistance Department suggests classifying eroding shorelines as slight (less than 1 foot per year), moderate (1 to 3 feet per year), or severe (more than 3 feet per year.)

In York County, the western shore of the Chesapeake Bay presents a unique challenge. The two areas with severe erosion are Reach 109 (the Bay Tree Beach/York Point area) and Reach 30 (the Waterview Road area west of the entrance to the Thorofare), both of which historically experience moderate to severe erosion rates of up to 3.5 feet per year. Although there is residential and industrial development along both of these shorelines, the erosion does not appear to be associated with the development. Most of the homes were built more than 10 years ago and are set back from the shoreline, although some homes along Dandy View Lane and Waterview Road are endangered. The erosion is due in large part to wave action associated with the physical alignment of the shore and prevailing storms. The York County Wetlands Board has approved several permits along Reach 30 for riprap, breakwaters, and marsh toe stabilization structures. The Bay Tree Beach area is much less developed than the Sandbox area. Most of these properties are not developed because the soils and high water table preclude on-site sewage disposal systems.

The rate of erosion in the remainder of the County along the York River is slight to moderate. The shoreline at the mouth of the river is vulnerable to the high-energy waves generated by the dominant northeast storms. The Yorktown historical area and recreational beach are along this shoreline. There is an ongoing project to stabilize the beach with a combination of methods, including riprap, breakwaters, beach nourishment, and vegetation. In addition, just south of Yorktown, the National Park Service is pursuing a project to stabilize the shoreline at the base of the significant bluff in the Moore House Road area.

5.5.5 Wildfire - York County

Many wildfires are caused by human acts like arson or careless accidents, or through natural occurrences, such as lightning strikes. Wildfire danger can vary greatly season to season and is often exacerbated by dry weather conditions. The high productivity and the tendency for the previous year's growth to remain interspersed among the current year's growth create a wildfire danger. VDOF has created Fire Risk Assessment Maps designed to help communities determine areas with the greatest vulnerability to wildfire.

The Wildfire Risk Assessment Map (Appendix B) delineates the aerial extent of wildfire vulnerability within York County. Approximately 34,322 acres (50 percent) of the County falls in a high wildfire risk area. York County determined that 5,906.5 acres (17 percent) of that total are federally-controlled land. Parameters used to establish these risk boundaries are based on

land use, population density, slope, land cover and proximity to roads. The proximity of the tree lines or brush to the highway or roadway is also included in the wildfire risk analysis to capture the human/wildfire causal relationship. Travel corridors increase the probability of human presence across a landscape, thereby increasing the probability of wildfire ignition. As such, areas closer to roads are much more likely to attain a higher ignition probability.

York County is currently experiencing an accelerated development rate. Land that once was rural and relatively inaccessible is now either under development or planned for development. Although the clearing of land for development removes potential fuel sources for wildfire, the wildfire hazard is not necessarily diminished because human access to the area is significantly increased. This development trend expands the wildland/urban interface, which places structures in close proximity to large amounts of vegetation, which increases the risk of wildfire (NWUIFPP undated).

5.5.6 Vulnerability Assessment – York County

The PHMPC conducted a vulnerability analysis for each critical hazard threatening York County. As several of these hazards are prone to occur in any part of the County, the exposure associated with tornados and winter storms is assumed to include the entire County. This section describes the method used to perform the vulnerability analysis for each hazard and then lists the results.

Flooding – York County

The York County Computer Support Services Division provided the tax parcel layer and tax assessor database for the entire County. They also provided a digital copy of the FEMA delineated floodplain information for the County. The detailed and approximate 100-year flood hazard layers were merged into one layer and intersected with the parcel layer. Any tax parcel that intersected the delineated floodplain was considered to be inside the floodplain and its building improvement value was added to the total property value in the 100-year floodplain.

Based on data from Spring 2005, the county parcel layer contains a total of 24,890 parcels. Approximately 4,265 of these parcels intersect the 100-year flood hazard boundary, which results in an at risk value of $1,393,066,000. Furthermore, York County provided an analysis of the hurricane storm surge zones based on digitized data provided by the Army Corps of Engineers. That study estimates that 8,929 parcels are located in a hurricane Category 4 storm surge zone, with an at-risk value of $2,225,806,700.

FEMA has developed a concept to highlight the impact that repetitively flooded structures have had on the NFIP. The term “repetitive loss,” as applied to the NFIP, refers to any property for which two or more flood insurance claims in excess of $1,000 each in a 10-year period of time have been paid. In 1998, FEMA reported that the NFIP's 75,000 repetitive loss properties had already cost $2.8 billion in flood insurance payments and numerous other flood prone properties continue to remain at high risk in the nation's floodplains. While these properties make up only one to two percent of the flood insurance policies currently in force, they account for 40 percent of the country's flood insurance claim payments. A report on repetitive loss structures completed

by the National Flood Insurance Program found that 20 percent of these structures are listed as being outside of the 100-year floodplain (Conrad et al. 1998).

Including flood insurance claims paid as a result of flood damage caused by Hurricane Isabel in 2003, FEMA has identified 30 structures as repetitive loss structures in York County.

Hurricane – York County

Hazards U.S. – Multi Hazard (HAZUS®*MH*) was utilized to perform a wind hazard analysis for the entire Peninsula region. HAZUS®*MH* software is a multi-hazard loss estimation program that was developed under a cooperative agreement between the National Institute of Building Sciences and FEMA. The current version of HAZUS®*MH* has the ability to calculate earthquake, wind, and flood hazards as well as potential economic losses associated with these hazards. The software is designed with the flexibility to perform loss estimations at three different levels. Level 1 utilizes all default parameters built into the software. Levels 2 and 3 require user defined scenarios and building inventory data. For the purpose of this Plan, a Level 1 wind analysis was performed to calculate the wind hazard for each Peninsula community. The probabilistic scenario activates a database of many thousands of storm tracks and intensities. This scenario generates hurricane hazards based on set return periods. These return periods define the statistical probability that a storm of a given size and intensity could occur within any year.

Table 5.5.5a lists the total dollar value of exposed structures for York County based on the 2002 Census data. Although current development trends in York County may render the 2002 Census data somewhat obsolete, this analysis depicts the probability of occurrence and can generally be used to estimate potential damages due to high winds.

Table 5.5.6a- Value of Exposed Structures from HAZUS®*MH* – York County

Occupancy Type	Value Exposed Structures ($1,000)
Residential	$3,238,262
Non-Residential	$348,300
Total	**$3,586,562**

The probabilistic analysis generated with the HAZUS®*MH* software utilized the same building stock information listed above. The probabilistic scenario generates hurricane hazards based on set return periods. These return periods define the statistical probability that a storm of a given size and intensity could occur within any year. The probabilistic method was used to generate loss estimations of storms with specific recurrence intervals; 10-, 20-, 50-, 100-, 200-, 500-, and 1000-year. Since residential structures comprised a significantly large percentage of the occupancy classification these data are presented in Table 5.5.5b below.

Table 5.5.6b-Summary of Probabilistic Analysis – Residential Structures – York County

Return Period	Residential Building Damage – Number of Buildings			
	Minor	Moderate	Severe	Destruction
10-year	7	1	0	0
20-year	118	7	1	0
50-year	1,257	111	13	1
100-year	1,754	214	23	5
200-year	6,121	1,732	262	159
500-year	7,679	3,595	960	695
1000-year	6,806	5,229	2,552	2,327

Hurricane Isabel- Structural Damage in York County

Winter/Ice Storm Vulnerability

Snow and ice storms usually associated with coastal storms do occur on the Peninsula (Table 5.5.5c). The weight of snow and ice on utility lines (power, cable, telephone) and trees causes lines to break and tree limbs to fall and break utility lines, block roads, and damage structures. During the Christmas ice storm of 1998, some York County residents were without power through the entire holiday week and into the first week of January. Tree damage that resulted from this storm was significant and the County spent several months in debris cleanup. VDOT,

which maintains the Interstate system, also maintains the primary and secondary roads in York County. VDOT is responsible for snow plowing and sanding these roadways. The National Park Service (NPS) manages and maintains the Colonial Parkway, which provides another route to the northern end of York County. NPS can close the parkway when there is a threat of falling trees or when the tree damage is extensive and road conditions are unsafe.

Table 5.5.6c- Recent Winter Storms – York County

Date	Magnitude	Descriptions
March 1993		
January 6, 1996		Property Damage, $50 thousand damage
January 27, 1998		Property Damage, $20 million damage
February 5, 1998		
December 23, 1998	½-inch of ice coated trees, roads, and utility lines.	Power outages, structural damage, and debris removal

Tornado Vulnerability – York County

The facilities and building stock that were identified as exposed under hurricane hazards are also exposed to tornado hazards. Tornados are random natural events that strike with little warning but are associated with thunderstorms and hurricanes.

Wildfire – York County

VDOF was utilized to estimate the wildfire risk for York County. This data layer was intersected with the County's tax parcel mapping in order to estimate the value of at risk structures. Approximately 50 percent of the County is located within the high wildfire risk zone. This area includes 14,584 parcels with an at risk improvement value of $4,711,794,700.

Critical Facilities

In order to assess the vulnerability of a community to natural hazards, the PHMPC conducted an inventory of York County structures and critical facilities (Appendix E). Critical facilities are those facilities that warrant special attention in preparing for a disaster and/or facilities that are of vital importance to maintaining citizen life, health, and safety during and/or directly after a disaster event.

The inventory of critical facilities for York County includes emergency response facilities such as police stations, fire departments, emergency medical service stations (EMS), public facilities

including schools and local government buildings. Those facilities that are geographically located within a hazard zone are listed below (Tables 5.5.5d, 5.5.5e, and 5.5.5f).

Table 5.5.6d- Critical Facilities at Risk – 100-Year Floodplain

Name	Code	Number
**Overlook Point	PS	208
Barcroft	PS	169
Brandywine	PS	174
Carys Chapel Rd.	PS	194
Crestwoods	PS	196
Dandy Vac Sta.	PS	199
Hollywood	PS	166
Jonadab Rd.	PS	206
Marlbank Cove	PS	185
Mill Cove	PS	175
Olde Port Cove	PS	182
Seaford Vac. Sta	PS	198
Yorkshire Downs	PS	187

Source: AMEC
Critical Facility Key Code, see Appendix E

Table 5.5.6e- Critical Facilities at Risk – Surge Zone Hurricane Category 4

Name	Code	Number
**Overlook Point	PS	208
Barcroft	PS	169
Belmount Apts	PS	202
Brandywine	PS	174
Calthop Neck Vac	PS	201
Cary's Chapel 2	PS	200
Carys Chapel Rd.	PS	194
Crestwoods	PS	196
Dandy Vac Sta.	PS	199
Dare Heights	PS	215
Dare Vacuum Sta.	PS	213
Hollywood	PS	166
Hornsbyville Rd.	PS	160
Jonadab Rd.	PS	206
Kings Villa	PS	162
Lakes Of Dare	PS	195
Lindsay Landing	PS	207
Marlbank Cove	PS	185
Mill Cove	PS	175
Moss Avenue	PS	167
Olde Port Cove	PS	182
Pinehurst Vac	PS	173
Read Street	PS	158
Running Man 1	PS	183
Running Man 2	PS	189
Scotch Toms	PS	176
Seaford Station Number 6	FR	62
Seaford Vac. Sta	PS	198
Sommerville	PS	163
Tidemill	PS	197
Whispering Winds	PS	184
Yorkshire Downs	PS	187
Yorktown Road	PS	214

Source: AMEC
Critical Facility Key Code, see Appendix E

Table 5.5.6f- Critical Facilities at Risk – High Wildfire Hazard Zone

Name	Code	Number
**Corvette	PS	205
*Colony Pines	PS	220
Banbury Water	PS	210
Baptist Rd.	PS	192
Barcroft	PS	169
Brandywine	PS	174
Calthop Neck Vac	PS	201
Cary's Chapel 2	PS	200
Carys Chapel Rd.	PS	194
Cockletown Road	PS	161
Crestwoods	PS	196
Dare Vacuum Sta.	PS	213
Environmental Services Building	GO	225
Finance Building	GO	227
Ft. Eustis Blvd.	PS	168
General Services	GO	229
Goosley Road	PS	177
Grafton High/Middle School	SC	58
Grafton Woods	PS	172
Griffin-Yeates Center	GO	228
Hollywood	PS	166
Hornsbyville Rd.	PS	160
Kiln Creek 2	PS	181
Lackey	PS	186
Landfill	PS	165
Lightfoot Sta.	PS	212
Lindsay Landing	PS	207
Lodge Road	PS	178
Marlbank Cove	PS	185
Mill Cove	PS	175
Moss Avenue	PS	167
Mount Vernon Elementary School	SC	56
Olde Port Cove	PS	182
Oriana Road	PS	164
Penniman East	PS	155
Pierpoint Place	PS	156
Pinetree Road	PS	151
Public Safety Building	GO	223
Queens Lake Middle School	SC	137
Queenslake	PS	217
Read Street	PS	158
Road Water Sta.	PS	209
Route 17	PS	170

Name	Code	Number
Royal Grant	PS	152
Running Man 1	PS	183
Schooner Blvd	PS	204
Scotch Toms	PS	176
Seaford Station Number 6	FR	62
Solid Waste Management Center	GO	224
Tabb High School	SC	80
Tabb Library	LB	222
Tabb Middle School	SC	55
Tabb Station Number 2	FR	134
Tidemill	PS	197
Williamsburg Hosp.	PS	203
York High	PS	179
York/Poquoson Courthouse	GO	226
Yorktown Elementary School	SC	61
Yorktown Library	LB	221
Yorktown Middle School	SC	63
Yorktown Road	PS	214
Yorktown Station Number 4	FR	122

Source: AMEC
Critical Facility Key Code, see Appendix E

This inventory highlights that some critical facilities, such as the Barcroft Pump Station, are in areas subject to multiple hazards. This should be taken into consideration when action is taken to protect York County's critical facilities.

5.5.7 Capability Assessment – York County

As an additional tool to assist with the examination of the hazards identified and to evaluate the community's ability to plan, develop, and implement hazard mitigation activities, the planning team developed a local capability assessment for York County. This assessment is designed to highlight both the codified, regulatory tools available to the community to assist with natural hazard mitigation as well as other community assets that may help facilitate the planning and implementation of natural hazard mitigation over time. The following Capability Assessment Matrix has been used as a basis for York County's mitigation plan.

Table 5.5.7 - Capability Matrix – York County

	York County
Comprehensive Plan	Yes
Land Use Plan	Yes, part of the Comprehensive Plan
Subdivision Ordinance	Yes
Zoning Ordinance	Yes
Floodplain Management Ordinance	Yes
-Effective Flood Insurance Rate Map Date	12-16-88

	York County
-Substantial Damage Language	Yes
-Certified Floodplain Manager	No
-Number of Floodprone Buildings	4,265 parcels
-Number of NFIP policies	2,079
-Maintain Elevation Certificates	Yes
-Number of Repetitive Losses	30
CRS Rating	Class 9
Stormwater Program	Yes
Building Code Version Full-time Building Official	VUSBC (IBC 2003) Yes
- Conduct "As-built" Inspections	Yes
- BCEGS Rating	3
Emergency Operations Plan	Yes
Hazard Mitigation Plan	Yes
Warning Systems in Place	Yes
-Storm Ready Certified	No
-Weather Radio Reception	Yes
-Outdoor Warning Sirens	Yes, just for Surry
-Emergency Notification (R-911)	Route alerting plans and an automated system in the planning phase.
-other (e.g., cable override)	Cable override & agreement with radio station.
GIS system	Yes
-Hazard Data	Yes
-Building footprints	Yes
-Tied to Assessor data	Yes
-Land Use designations	Yes
Structural Protection Projects	Yes
Property Owner Protection Projects	Yes
Critical Facilities Protected	Partially
Natural Resources Inventory	Yes – limited
Cultural Resources Inventory	Yes – limited
Erosion Control Procedures	Yes
Sediment Control Procedures	Yes
Public Information Program/Outlet	Web site & online Customer Service Utility
Environmental Education Program	Yes

Form of Governance

The York County Board of Supervisors is comprised of five elected citizens, one from each of the five election districts. Supervisors serve four-year terms with the Chairman and Vice

Chairman elected annually by the five-member board. The Board of Supervisors serves, by law, as the governing body of the County, charged with administering County functions which include: preparation of the budget and appropriation of funds; appointing members of various boards and committees; levying taxes; constructing and maintaining County buildings; adopting the comprehensive land use plan and approving and enforcing related ordinances; and adopting and enforcing ordinances for police, sanitation, health, and other regulations permitted by state laws.

Guiding Community Documents

York County has a range of guidance documents and plans for its departments. These include a comprehensive plan, a build-out study, a citizen's guide on land development, transportation studies, Yorktown Historic District and Design Guidelines, and emergency management plans. The County uses building codes, zoning and, subdivision ordinances, and various planning strategies to address how and where development occurs. One essential way the County guides its future is through policies laid out in the Comprehensive Plan.

Charting the Course to 2025: The County of York Comprehensive Plan

The Code of Virginia requires all cities and counties in the state to have a comprehensive plan and to review it every five years to determine if it needs to be revised. York County's *Comprehensive Plan, first adopted in 1991, and updated in 1999 and 2005,* features the following:

- The long-range plan for the physical development of the County, including what kind of development – single-family residential, commercial, multi-family residential, industrial, etc. – is considered desirable and appropriate for each area of the County.
- Data that guides development to appropriate areas of the County based on the carrying capacity of the land, the existing development character, the presence of infrastructure and public facilities, and natural resources.
- Extensive public participation efforts. The Comprehensive Plan Review Citizen Input Process used for the 1999 plan update received an Achievement Award from the National Association of Counties in 1997.
- Environmental goals focused on air, land, noise, solid waste, and water elements, including water quality, protecting wetlands, marshes and rivers from degradation, protecting shoreline property from erosion and minimizing the need for streambank and shoreline erosion controls.
- Maps of wetlands, flood hazard areas, Chesapeake Bay Preservation Areas, watershed protection areas, areas of high soil erodibility, areas with high water tables, areas with shrink/swell soils and areas with steep slopes.
- An estimate of maximum build-out population, the total number of people who would be living in York County if all the residential land were developed at its highest allowable density. The plan established 80,000 as the desirable maximum build-out population, and residential land use densities were established and applied to areas of the County with the intent of achieving this goal. The County appears to be on track toward meeting this goal,

with an estimated maximum build-out figure of approximately 81,000 under almost any realistic development scenario.

- Plans for continued growth and development in designated areas, including but not limited to:
    - South County; south of Ft. Eustis Blvd., and east of Rte. 17
    - North County; Lightfoot exit off of Interstate 64
    - Potential Mixed Use areas identified along Route 17 on Denbigh Boulevard, and in the Lightfoot and Skimino areas of upper County.
- Citizen comments through surveys, neighborhood meetings and committees (currently being gathered for input to the comprehensive plan updated for 2025).

Zoning & Development Standards

- Identifies existing federal and state regulations for wetland, floodplain, and Resource Protection Area and Resource Management Area (RPA/RMA) for Chesapeake Bay protection.
- Outlines required standards for new development and redevelopment based on use and zoning designation.

York County has adopted an ordinance that exceeds the minimum requirements of the NFIP. The ordinance designates the Flood Zone District as an Overlay District in County Code, §24.1. The community has 30 repetitive losses through the NFIP. Manufactured homes are not permitted in the floodplain, although there are some existing units in the floodplain. The ordinance outlines very specific hazardous materials/uses that are not permitted in the overlay district, including oil and oil products, radioactive materials, and specific poisons. The finished crown/centerline elevation of all new public or private streets must be at least 6½ feet above mean sea level (NGVD). The ordinance contains floodplain fill regulations that exceed minimum NFIP standards. Construction standards for structures in Zones A, AE and V reference the Virginia USBC and the requirements therein. The ordinance does not mandate additional freeboard for development; however, freeboard between one and a half feet and three feet above BFE is strongly recommended and the ordinance notes that a reduction of flood insurance premiums may result. Development in approximate A Zones requires that detailed hydrologic and hydraulic analyses be used to determine a BFE and 100-year floodplain boundary for the property. Flood hazard information is not currently noted on the Building Permit Application, but must be included on site plans submitted for review. Residential permit applicants must complete the *Preliminary Natural Resources Inventory* worksheet that includes indicators of the presence of regulatory wetlands.

The zoning and code enforcement staff within the Department of Environmental and Development Services regulate land use and development activities and elimination of property-related nuisances. The Zoning Section is responsible for zoning code enforcement and the elimination of property-related nuisances such as tall grass, weeds and junked cars. The Board of Zoning Appeals is responsible for reviewing and hearing appeals from decisions of County administrative officials concerning the zoning and subdivision ordinances; considering requests

for variance relief from the requirements of these ordinances; and considering exceptions to the Chesapeake Bay Preservation Area Regulations. The department coordinates weekly staff-level reviews of site plans and proposed projects.

Stormwater Program

The York County Department of Environmental and Development Services review all new development in the County for compliance with state and county regulations. Offsite flow must be maintained at the same rate as before development if the downstream system is not adequate for increased flows. Installation of Best Management Practices (BMPs) such as wet ponds or lakes, and dry ponds, as well as other engineered systems are typically used.

In addition, when the County receives complaints/inquiries about drainage problems, the staff complete a study to determine if there are easements, and whether the County has responsibility to correct the problem. Staff makes recommendations for addressing the issue that may include developing a project plan and adding it to the Capital Improvement Plan list and ranking it with other projects in the schedule.

The County is working on drainage improvements for the Tabb Lakes outfall, Foxwood outfall, Moores Creek, which drains Woodlake, Running Man and properties in-between, Edgehill Drainage Study, and the Brandywine subdivision.

The County also has a Stormwater Advisory Committee (SAC) with the express goals of:

- Developing and implementing a public education and outreach program on stormwater issues,
- Increasing public involvement and participation in stormwater issues,
- Providing increased citizen access to County staff for stormwater and drainage issues, and
- Assisting County staff and the Board of Supervisors in identifying drainage problems and developing priorities for stormwater drainage projects.

The SAC has electronically posted and distributed copies of the committee's brochure, *A Homeowner's Guide to a Healthy Stormwater Drainage System*, and two important Fact Sheets entitled, *What You Can Do to Reduce Flooding in Your Area*, and *What You Can Do to Reduce Pollution In Your Area*. These documents are a means of educating the public about preventing flooding and maintaining drainage systems.

The Committee developed a presentation entitled *How to Reduce the Chance of Flooding* that is presented at HOA meetings and on the County's Community TV during hurricane season. The Committee also worked with the U.S. Army and U.S. Air Force, whose property borders York County, to ensure a coordinated approach to stormwater maintenance.

Public Education

Among the readily available public outreach mechanisms for York County, the website (http://www.yorkcounty.gov) provides residents with pertinent information, and answers numerous Frequently Asked Questions (FAQs). The County also posts most of its guiding documents, including the Comprehensive Plan on this site. The County publishes a quarterly

newsletter (CITIZEN NEWS), which is mailed to every household. The County maintains a government access TV channel using Cox Cable.

York County's Department of Fire and Life Safety provides a number of fire and life safety programs and maintains a stock of different types of educational materials available for residents, businesses, teachers, youth and adult groups. A Fire Prevention Educator provides child fire safety programs in the schools. The Department of Fire and Life Safety works with other County agencies and departments to sponsor *Safety Town*, a program for pre-school children in the summer to teach programs, such as fire safety, bike safety, electrical safety and disaster preparedness. The Department partners with the Sheriff's Office, York County Chamber of Commerce, the York-Poquoson American Red Cross and other County organizations to promote life safety and preparedness. The Department's Office of Emergency Management promotes disaster preparedness year-round through public programs (some mentioned above) and in the County quarterly newsletter to residents. In 2005, the Office of Emergency Management partnered with a local home improvement store to promote preparedness during the Christmas season. The Department's web site promotes emergency preparedness and life safety.

The Department of Environmental and Development Services Online Customer Service System provides a service for customers to submit service requests to the Department over the Internet. In addition to entering a service request, customers can follow the status and progress of their request online. Complaint/request categories include: drainage; garbage/recycling/yard debris; code enforcement; sewer; and mosquitoes. The department provides site plan review status information online.

Emergency Preparedness

The mission statement for York County's Department of Fire and Life Safety is to provide protection and safety to our community in order to prevent emergencies when possible, and to respond quickly, minimize pain, suffering and loss when emergencies do occur. The Department includes the Office of Emergency Management with the responsibility to minimize the effects of a significant emergency or disaster through the coordination of a comprehensive, risk-based program of mitigation, preparedness, response, and recovery.

A comprehensive update to the County's Emergency Operations Plan (EOP) was completed in 2003 by the Office of Emergency Management. The plan is maintained on the internal web site for County employees. The County has a regular full-scale exercise program that is part of the radiological emergency preparedness program and, because there are some basic functions regardless of the emergency, the lessons learned serve an all-hazard purpose. The Department is responsible for maintaining an Emergency Operations Center (EOC) with all the essential materials and supplies to sustain an emergency response.

The following provides an overview of the mitigation activities implemented by the County's Department of Fire and Life Safety:

Warning

Emergency Alert System (EAS) is a national civil emergency alert system that uses message relays between member radio and television stations to inform the public about immediate threats to national security, life, and property. EAS is now routinely used for severe weather warnings and can also be employed to disseminate Amber Alerts for missing children. The enhancement is an initiative of Governor Warner's Secure Virginia Panel designed to improve statewide preparedness, response, and recovery capabilities for emergencies and disasters. Governor Mark R. Warner announced June 5, 2004, that Virginia will enhance its public warning capabilities with a new satellite-based system that can rapidly transmit EAS messages throughout the Commonwealth.

York County coordinates with Newport News Waterworks and Williamsburg Water to provide door-to-door notification to property owners in the inundation zone for the agencies' dams located in York County.

The County recently made arrangements with a radio station in Gloucester (WXGM 99.1 FM) to broadcast emergency information for York County throughout a disaster and the recovery phase. Due to the large broadcasting area on the Peninsula and Southside, and widespread damage throughout Hampton Roads after Hurricane Isabel, the media became overwhelmed and summarized emergency information for the smaller media markets leaving out details residents needed for recovery activities.

Neighborhood Emergency Information Distribution System (NEIDS) – Extended power outages during the 1998 ice storm resulted in a large number of remote-area residents without access to current disaster-related information. The York County staff created NEIDS to relay pertinent information to homeowners' association leaders in remote areas, with the expectation that these persons could further distribute the information to residents. The system was further refined after Hurricane Isabel, and pre-disaster meetings with community leaders help ensure that the system maintains its effectiveness despite changes in personnel at the County or community level.

Evacuation

In addition to the information provided above regarding the state's Evacuation Plan, County planners note that storm surge zones located in the eastern part of the County are heavily developed with mostly single-family residential units. Evacuation of such a large number of people onto Route 17 and north across the Coleman Bridge through low-lying Gloucester County and on into Fredericksburg, while maintaining emergency vehicle access to all parts of the County, is challenging.

Special Needs Program

As part of the enhanced 9-1-1 system, York County maintains a database of addresses for special needs residents. Residents voluntarily register for this service through the Department of Fire and Life Safety. Dispatcher's notify first responders that they are responding to a residence that has a special needs resident and describes the type of special need. The database is geo-referenced, and dispatchers can sort for special needs residents in specific geographic areas of

the County to notify or warn them of potential hazards or to check on them during disasters. The County maintains a separate database of manufactured home parks.

Community Emergency Response Teams (CERT)
York County Department of Fire and Life Safety established CERT with the emphasis on building neighborhood teams. The purpose is to have neighborhoods and areas of the County better prepared and self-sufficient when disaster strikes. Currently the County is working with several neighborhoods to develop neighborhood emergency response plans and provide CERT training. The County has a neighborhood recognition program for those neighborhoods that organize CERTs and develop an emergency plan.

Other Mitigation Activities
In 2000, York County received Hazard Mitigation Grant Program funding of $7,937 to install impact resistant glazing in windows for the Emergency Operations Center and associated offices.

Following Hurricane Isabel, the County rigidly enforced the substantial damage regulations in the floodplain management ordinance, and approximately 35 structures were required to be elevated or demolished and rebuilt. Structures that were uninhabitable after Hurricane Isabel were able to make application for tax relief with the County. Each case was considered individually.

As a result of significant damage from flooding during Hurricane Isabel, the Yorktown waterfront is being substantially redeveloped, including work that was completed in FY2003 for the Riverwalk Landing Project. The $27 million project, overseen by the County's Office of Economic Development opened in spring of 2005. The project features a mix of retail shops and office space anchored by a restaurant. There is also a new parking structure and two public piers for private and commercial vessels. A substantial portion of the waterfront was elevated with fill, approximately four feet above previous grades, bringing it above the 100-year flood elevation.

Household Chemical Disposal is a special program, offered by the Virginia Peninsulas Public Service Authority, which provides an opportunity for York County residents to dispose of a variety of household chemicals and paint products including: gasoline, insecticides, paint, brake fluid, herbicides, solvents and cleaners. Collections take place one Saturday morning every other month. This program helps remove aging hazardous chemicals from residences throughout York County, including areas that could be affected by flooding.

Backup generator power is available to most critical facilities, i.e. fire stations, emergency operations center, emergency communications center, and the County's computer network servers. Limited backup generator power is available at one school serving as a shelter to provide lights and some cafeteria services in shelter area. All sanitary sewer stations have emergency generators and three of the four well facilities also have backup power. The County continues to replace the external breather tubes on the vacuum sewer system that is susceptible to

flooding. The areas of Dandy and Seaford were shut down due to flooding during Hurricane Floyd. Dandy replacements are complete and most of Seaford is already complete.

York County's adopted Capital Improvements Program (CIP) for Fiscal Years 2005-2010 includes the following storm water projects:

- Greensprings Drainage Improvements – Design and construction of piping system to restore the ravine and other recommended improvements due to increased drainage causing erosion in the ravines.
- Cook Road/Falcon Road Drainage Improvements – To correct and stabilize a low-lying area with inadequate outfall drainage system to prevent flooding.
- Edgehill/Fort Eustis Drainage Improvements – This outfall drains part of Edgehill and adjacent properties towards Fort Eustis Boulevard and the Poquoson River. The majority of improvements will involve improvements to the roadside drainage and major outfall system.
- EllaTaylor/Gray Lane Drainage Improvements – To correct drainage pattern which was reversed during construction of commercial property on Route 17.
- Rich Acres/Route 17 Drainage Improvements – To correct inadequate drainage system.
- Terrebonne Drainage – To correct inadequate drainage system.

The CIP also includes projects to provide or improve water service to existing areas of the county, which enhances fire protection. Those areas of the County include:

Old Quaker Estates	Queens
Skimino Farms	Nelson Park
Burcher Road	York Terrace
Carver Gardens	Old Taylor Road

The CIP includes an emergency shelter survey proposed for FY2007. This project would provide for an evaluation of schools and various County buildings and their suitability for emergency operations and shelter use with safety and sustainability as the significant concern during major wind events.